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December 17, 1999

69164

Dockets Facility
U.S. Department of Transportation
Room PL-401
400 Seventh Street, SW
Washington, DC 20590-0001

Re: COMMENTS OF AIR PRODUCTS AND CHEMICALS, INC.
ON PIPELINE SAFETY IN HIGH CONSEQUENCE AREAS
DOCKET NO. RSPA-99-6355-7

Dear Sir/Madam:

I am responding on behalf of Air Products and Chemicals, Inc. to the October 21, 1999 request for comments about the possible need for additional regulations on gas and hazardous liquid pipelines in high consequence areas. Headquartered near Allentown, Pennsylvania, Air Products is an international supplier of industrial gases and related equipment and specialty and intermediate chemicals. We have 17,000 employees in over 30 countries, with sales of \$5 billion to more than 100 countries around the world.

Air Products operates approximately 700 miles of pipeline in the U.S. for the transportation of industrial gases such as hydrogen, oxygen and nitrogen to hundreds of customers in industries including steel, oil, chemicals, electronics, food and agriculture. Hydrogen pipelines are of particular interest because their use is rapidly expanding to meet the growing demands for hydrogen in the production of cleaner burning fuels. Since much of our pipeline system is located in heavy industrial areas of the country where many of our customers are concentrated, this discussion is of keen interest to our company.

I attended the public meeting in Herndon, Virginia on November 18 and 19, 1999, concerning the use of pipeline integrity management programs in high consequence areas. Air Products believes this meeting was an important step toward examining existing pipeline safety programs, and considering additional preventive measures that may be needed to increase public safety and preserve the environment.

Air Products has two primary interests in this discussion:

1. In response to the request from the Office of Pipeline Safety, we are very interested in sharing our considerable experience in pipeline safety programs which may be useful as various regulatory options are considered.
2. We want to point out the clear distinctions between types of pipelines, and discourage the use of a rigid “one size fits all” approach to regulating them. For example, we believe an integrity management program designed for hydrogen pipelines would not be appropriate for natural gas or hazardous liquid pipelines. Conversely, safety measures that may be effective for other pipelines may not be appropriate for hydrogen pipelines.

Background on Air Products’ Pipeline Safety Program

As with all our facilities, safety is Air Products’ highest priority in operating our pipeline system. In fact, being an industry leader in health, safety and preservation of the environment is one of Air Products’ key strategic objectives. This leadership can easily be discerned in our pipeline safety management program, which recently has been benchmarked by several leading chemical companies.

Air Products’ approach to pipeline safety is proactive and multi-layered. Our standards extend considerably beyond existing regulatory requirements. For all of our flammable gas pipelines, highly sophisticated computer modeling techniques are used to evaluate the pipeline system, and to identify sections located in “high consequence areas”. These risk studies often result in the use of heavier wall thickness, excess flow valves, isolation valves, and redundant pressure safety relief valves, along with intensive testing, inspection and maintenance procedures.

Air Products’ pipeline system in Southeastern Texas provides a good example of the actual safety measures we undertake. We have operated pipelines in this region for more than 30 years, and today the system includes approximately 300 miles of industrial gas pipelines, about half of which are hydrogen pipelines. Our safety program on this system includes:

- A. Weekly aerial surveillance of our entire pipeline system.
- B. A computerized monitoring system which is enhanced by a team of experienced technicians who drive along the pipeline regularly to inspect it.
- C. As an active participant in the “One-Call” system in Texas, we receive numerous calls each week alerting us about potential excavation work in the area. As follow-up to these calls, our technicians typically meet on a daily basis with contractors working in the area.

- D. We distribute safety pamphlets to residents within 700 feet of our pipeline, conduct safety demonstrations for the public, and meet with local emergency management committees on a regular basis.
- E. We perform annual safety audits of our stations and pipeline right-of-way.
- F. In addition, as a result of our risk analysis process, we have constructed numerous excess flow valves along this system that are designed to close within seconds of any significant leakage in the pipeline. The location of these valves is closely related to the pipeline's proximity to "high consequence areas". Our system currently includes twenty-five excess flow valves located along the 150 miles of hydrogen pipeline we operate in this area.

Managing these safety measures is a significant undertaking, but our proactive, multi-layered approach to safety has been well worth the investment for Air Products and our communities in Texas and other locations.

Specific Comments

There are clear distinctions between types of pipeline and the characteristics of products transported in them which need to be fully evaluated when considering an integrity management program. These distinctions include length, diameter and location of the pipeline, number of branches on the pipeline, and properties of the product such as flammability, corrosiveness, and environmental impact potential, to name a few.

For example, areas that should be considered "high consequence areas" can differ dramatically depending on the nature of the product in the pipeline. A sensitive estuary might be a "high consequence" environment for under water hazardous liquid pipelines, but would be a very low consequence environment for an under water hydrogen pipeline.

Likewise, we believe it would not be appropriate to require periodic testing involving smart pigging for all types of pipelines. Current smart pig technology is not well suited for hydrogen pipelines, which typically have with many branches, different diameters, or where excess flow valves are used as part of a pipeline safety management program.

The most significant risk in the case of cathodically protected hydrogen pipelines is the risk of pipeline breaches caused by outside forces. Moreover, in the case of our hydrogen pipelines, we believe this risk can be addressed more effectively through our multi-layered approach that reduces both event frequency and consequences than they would be through smart pigging.

Conclusion

When it comes to pipeline safety management systems, clearly one size does not fit all. It is critically important to consider safety programs industry by industry, product by product, location by location. Therefore, we believe any new regulations should address gradations of risk and be performance based, rather than prescriptive requirements that may not be appropriate for all pipelines.

Air Products is currently working on a task group of all major producers in our industry, under the umbrella of both European and U.S. industrial gas associations, to define safety standards for pipeline design and operation. As the regulatory process moves forward, we will continue to work in our industry, as well as with OPS and other regulatory bodies, to fully examine safety programs that are currently in place and evaluate additional systems that may be appropriate to provide further safeguards to protect our workers, the public and the natural resources of our communities.

Please contact me at 610-481-8868 or LINNEYRE@APCI.com if you have any questions about these comments or for more information about Air Products' pipeline safety management program.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert E. Linney", with a stylized flourish at the end.

Robert E. Linney
Engineering Associate - Process Safety